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Hazardous Waste Tank Registered Professional Engineering Assessment and Certification

Electronic Chrome and Grinding Co., Inc.

9128-9132 Dice Road
Santa Fe Springs, California 90670
07 June 2012

Prepared for:
Electronic Chrome and Grinding Co., Inc.
9128-9132 Dice Road
Santa Fe Springs, California 90670

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1.0 Introduction

Title 22 California Code of Regulations (CCR) Title 22, subpart J (Tank Systems) requires that tank systems used for managing hazardous wastes have a written engineer's assessment prepared at five year intervals. The Electronic Chrome and Grinding Co., Inc. (Electronic Chrome) facility is a large quantity generator of RCRA hazardous waste operating a hazardous waste acid/chrome treatment (tank) system. As the system recycles on-site for re-use well over 50% of the wastes treated, the system is excluded from permitting under the Tiered Permit requirements. As a large quantity generator, an engineering assessment and certification is still required of the tank system.

The waste tank system consists of the following waste treatment tanks:

- WT #1: Waste hydrochloric acid/hexavalent chromium holding tank
- WT #2: Chrome reduction, neutralization and precipitation tank (magnesium hydroxide neutralization and caustic + sodium hydrosulfate addition)
- WT #3: Holding tank for flocculent addition (polymer flash mix)
- WT #5: Two stage clarifier – stage 1
- WT #6: Two stage clarifier – stage 2
- Filter press

The tank system also includes associated piping and pumps and the concrete secondary containment. Tank WT #4 is a holding tank for treated waste water (to be reused back into the process), and though located within the waste treatment area is not considered a waste tank and is therefore not part of this assessment.

On 29 February and 07 June 2012, ESCI EnviroServices conducted a visual assessment of the design, construction, and condition of the hazardous waste tank system located at the Electronic Chrome facility at 9128-9132 Dice Road, Santa Fe Springs, California. Jim Storms, PE (civil) also participated in the 07 June 2012 assessment visit. This assessment was performed to assist Electronic Chrome in demonstrating the tank system's integrity and fitness for use as a waste acid treatment system. ESCI EnviroServices performed this assessment pursuant to Title 22 California Code of Regulations (CCR) §66265.192 'Design and Installation of New Tank Systems or Components." In accordance with this regulation, Electronic Chrome must obtain a written assessment, reviewed and certified by an independent, qualified, professional engineer, registered in California in accordance with §66270.11(d) attesting that the system has sufficient structural integrity, is acceptable for the transferring, storing and treating of hazardous waste, and that the tanks and containment system are suitably designed to achieve the applicable requirements of 22 CCR subpart J.

This report documents the conditions observed during the inspection of 29 February 2012 and is intended to meet the requirements of 22 CCR 66265.192 (a) and (k), and replaces the previous certification performed in 2006.

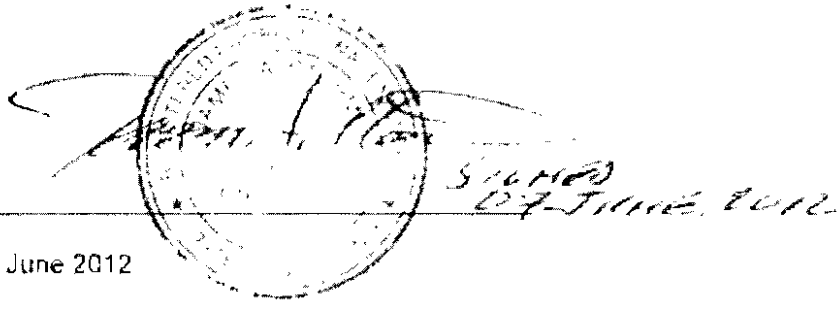
2.0 Professional Engineers' Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

To maintain the validity of this certification, the required enhancements to the existing system (Supplement A) must be completed no later than 15 July 2012.

Certifying Engineer: **James A. Storms, P.E.**
California Civil Engineer # C-43017
Storms Consulting Engineers

Engineering Seal:



Signature

Certification Date 7 June 2012

Certification Notes and Conditions:

The engineer's certification is made, subject to fulfillment of Supplement A requirements, specifically for the regulations cited; no evaluation was made—nor should any evaluation or judgment be inferred by this certification—for any other regulations or requirements. Other regulations may include those pertaining to worker safety, chemical handling and safety, hazardous waste management and disposal, building, electrical, plumbing, and fire codes, air quality management, and any other regulations and requirements that may be applicable to operations at this facility. The owner is encouraged to consult with the governing agencies and to seek assistance from professionals in these fields to ensure full compliance with all applicable regulations.

3.0 Methodology

Electronic Chrome facility personnel provided information and described the process flow for the waste acid treatment system. Descriptions of the system, waste treatment processes and system operation information was also obtained from the October 1991 "Electronic Chrome – Chrome Precipitation and Evaporation System Operation and Maintenance Manual" developed by the system designer, KRC Associates, and verified as current by facility personnel during the 2006 and 2012 assessments. As noted during the evaluation, the waste treatment system utilizes a treated water recycling/reuse system, where all treated wastewater is reused in onsite processes; no sewer discharge occurs. Visual assessments of the system including all tanks and connecting piping were performed by James A. Storms, P.E., (Civil) and Steven M. Menkus, P.E., (Chemical), both registered professional engineers in the State of California.

Mssrs. Storms and Menkus measured the dimensions of the secondary containment system that encloses the waste acid treatment system and inspected the containment for signs of leakage, corrosion, decomposition, pitting or any degradation that might lead to failure of the secondary containment system to function as designed.

Mssrs. Storms and Menkus performed a qualitative evaluation of the tank foundations, tanks, pumps, and piping to assess the adequacy of design and structural strength to prevent collapse or rupture during normal operations or foreseeable seismic event.

It should be noted that this evaluation was a visual assessment of the tanks and associated piping specifically for fitness for continued use as part of the waste acid treatment system. The evaluation was not intended to serve as a determination or assessment of whether there have been past leaks from the system, or whether there are current, non-visually apparent leaks or damage to the tanks and piping system.

4.0 Assessment Requirements, Information and Assessment

> Note: any modifications to the system, including modification or replacement of tanks, piping, ancillary equipment, or containment may invalidate the engineer's certification for this system, unless the engineer of record is made aware of these changes in advance and approves them if they fall under the applicable regulations of this certification

4.1 Information Required by 22 CCR 66265.192(a)

Title 22 CCR 66265.192(a) requires specific information, at a minimum, be included in the assessment. This information is presented below:

4.1.1 Design Standards (§66265.192(a)(1))

Design standards for the system and individual system components were not readily available. However, based on vendor information provided at the time the tank system components were installed and visual observations of the system, the tank system components/materials (polypropylene and polyethylene) generally meet the following:

- ASTM D4101 - 11 Standard Specification for Polypropylene Injection and Extrusion, and
- ASTM F2389 - 10 Standard Specification for Pressure rated Polypropylene (PP) Piping Systems
- ASTM D1785 - 06 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
- ASTM D1998 - 06 Standard Specification for Polyethylene Upright Storage Tanks

The vertical cylindrical waste acid/chrome holding tank (WT #1) is a commercially manufactured rotationally molded polyethylene tank generally meeting ASTM D1998-06 specifications.

Tanks WT #2, #3 and #4 are fabricated of extrusion welded polypropylene sheets. The polypropylene extrusion material (rod) is pulled from a spool and purged through an electronically heated screw chamber in the welding gun. The material becomes a fully molten strand which is applied to the weld area. The weld area is preheated with a heater mounted on the welding machine. This allows for a strong molecular bond to take place between the polypropylene rod and material. The tanks are constructed of appx. ½" thick polypropylene sheets. Tank WT #2 is a rectangular tank reinforced by outer straps – 2" x 2" x 3/16" steel straps encapsulated for corrosion resistance by polypropylene. Tanks WT #3 and WT #4 are rectangular tanks reinforced by outer straps – 1½" x 1½" x 3/16" steel straps encapsulated for corrosion resistance by polypropylene.

Tanks WT #5 and #6 is a dual/split rectangular dual cone bottom tank constructed of welded steel coated with an elastomeric polyurethane. As the wastes being treated in these tanks have been neutralized to an approximate pH of 7, the elastomeric polyurethane coated steel is determined to be compatible with the wastes being treated.

The filter press is constructed of enamel coated steel (frame) and fiberglass (press plates) with PVC piping. The waste treatment residuals managed in the press (chromium hydroxide and other solids plus water) are non-corrosive.

The secondary containment is constructed of reinforced concrete coated with a high-solids acid resistant epoxy coating.

The piping is a combination of polypropylene and polyvinyl chloride and individual sections are joined via a combination of threaded fittings and glued piping connections. Transfer pumps are of corrosion resistant design intended for service with corrosive liquids.

As noted in this certification, the tank, pumps and piping system are appropriate for the intended usage and are chemically resistant to the anticipated aqueous, low-pH range waste acids the system is treating. Based upon visual evidence of the tank exteriors and partial observation of tank interiors, it is concluded that the materials of construction comply with appropriate design standards.

4.1.2 Hazardous Characteristics of the Waste (§66265.192(a)(2))

The hazardous characteristics of the waste treated in the waste acid/chromium treatment system are corrosivity due to the presence of hydrochloric acid, and toxicity due to hexavalent chromium.

4.1.3 Corrosion Protection (§66265.192(a)(3))

Specific materials of construction for all components are noted above in Section 4.1.1. The tanks have been installed above a concrete slab and epoxy coated concrete secondary containment has been provided. No metal components are in direct contact with soil or corrosive liquids. External steel structural components have been cleaned and reinforced to provide seismic protection. Structural support and reinforcements are fabricated of steel (some painted with epoxy paint) and show no current evidence of significant degradation.

4.1.4 Underground Tank Systems (§66265.192(a)(4))

The tank system is installed aboveground. The area is not at risk due to vehicular traffic.

4.1.5 Structural Design Considerations (§66265.192(a)(5))

Based on visual observation of the tank systems, their installation and mounting, and the materials of construction, the following qualitative determinations have been made:

- The tank system appears to have been adequately designed and has sufficient structural strength to prevent collapse or rupture.
- The tank foundations appear to be able to maintain the full load of full tanks.
- The tank system is not located in a saturated zone, but is generally located within a seismic fault zone. The design and installation of the tank system appear to protect from flotation or dislodgement, and appears to have sufficient seismic anchoring. Additional enhancements to the existing seismic anchoring to be

installed prior to 15 July 2012 include (See Supplement A):
  - Cable securement of WT #1 for increased overturn and vertical acceleration resistance;
  - Additional securement of WT #2 to the secured frame and concrete base;
- The mounting of the ancillary pumps and piping appear to have been adequately designed and have sufficient structural strength to prevent collapse or rupture.
- As the tank system is located aboveground on concrete in temperate Southern California, frost heave is not a design factor.
- The tank system appears to have been properly installed and is well maintained.
- The secondary containment system will contain at least 100% of the contents of the largest tank within the containment area.

4.2 Additional Requirements of 22 CCR 66265.192

Title 22 CCR 66265.192 contains additional requires for new hazardous waste tank systems. These are discussed below:

4.2.1 Proper Installation of Tank Systems (§66265.192(b)(1–6))

The tank system was visually inspected by the system designer and fabricator upon installation, and the tanks were leak checked at the fabrication facility and upon installation. Additionally, as part of this independent assessment, Mssrs. Menkus and Lichten conducted an inspection of the system. For both, the following were specifically evaluated for the presence of: weld breaks, punctures, cracks, corrosion, and other structural damage. None were observed.

4.2.2 Backfill for Underground Tanks and Piping (§66265.192(c))

This section is not applicable because the tanks, piping and components are not located underground.

4.2.3 Tightness Testing for New Tank Systems (§66265.192(d))

Tanks WT #5 and #6 is existing steel tank (two compartments within a single outer shell). For this tank set (the two-stage clarifier), records were unavailable to establish that the tanks were hydrostatically tested upon initial installation. However, they have been in use since 1993 and no leaks have been reported or recorded. During the certification process, the tanks were observed to be partially full to completely full and no evidence of leaking was observed by either Mssrs. Lichten, Menkus or Storms during their site evaluations.

For tanks WT #1 through #4, the tank system was visually inspected by the system fabricator/installer upon installation, and the tanks were leak checked at the manufacturing facility. Additionally, as part of this independent assessment, Mssrs. Lichten, Menkus and Storms conducted an inspection of the system. The tanks were evaluated for the presence of: leaks, weld breaks, punctures, cracks, corrosion, and other structural damage. None were found.

4.2.4 Ancillary Equipment Support and Protection (§66265.192(e))

All ancillary equipment containing regulated waste including piping, pumps, valves,

mixers, filter press, etc. is located within the concrete secondary containment area. Transfer pumps are anchored to platforms mounted within the containment area and piping is affixed to concrete walls and/or steel support structures. Painted metal supporting beams and elevated work platforms have been used to reinforce ancillary equipment from vibration, thermal expansion, or seismic movement. Since the secondary containment structure has a capacity of over 2,100 gallons which exceeds the largest tank within the structure (1,080 gallons), plus rainfall from a 24 hours of a 25 year storm (appx. 5 inches in the Whittier area), the ancillary equipment does not appear to pose a risk of spill or release to the environment.

4.2.5 Corrosion Protection (§66265.192(f))

The tank system is located in a reinforced concrete containment area that is coated with a chemically resistant epoxy coating. The tanks do not contact soil and tanks WT #1 through #4 are all constructed of polyethylene or polyvinyl chloride; non-metallic materials that are not susceptible to corrosion. The two stage clarifier tank WT #5 and #6 is constructed of steel and is coated with a elastomeric polyurethane corrosion resistant coating, and is not exposed to corrosive wastes. All waste piping is made from PVC.

4.2.6 Engineering Certification Documentation (§66265.192(g))

The documentation required by this section is maintained on file at the Electronic Chrome facility.

4.2.7 Tiered Permit Facility Requirements (§66265.192(h))

Although this tank system treats hazardous waste; the system is designed and operated to reuse the treated waste water back into facility processes. Approximately 80% of the waste volume treated is reused on-site, with the remaining wastes (chromium containing filter cake) shipped off site for disposal. As the facility recycles a significant amount of the wastes treated, the system is exempt from tiered permitting requirements per Health & Safety Code 25143.2(c).

4.3 Information Required by 22 CCR 66265.192(k)

Title 22 CCR 66265.192(k) requires specific information, at a minimum, be included in the assessment. This information is presented below:

4.3.1 Tank Configuration (§66265.192(k)(1))

- **WT #1: Waste hydrochloric acid/hexavalent chromium holding tank**
  - Cylindrical vertical; 4' Dia x 9' H
  - Rotationally molded polyethylene; appx. 3/8" thickness
  - Seismic bracing: Steel L-supports bolted into the concrete containment base and (by 15 July 2012) cable tie downs into concrete mounted steel base plates
  - Capacity: 700 gallons
  - Influent waste: Chrome plating rinse waters from plating processes and waste hydrochloric acid/hexavalent chromium wastes from stripping tank

(corrosive (pH <2) and toxic (Cr^{VI}))
- Overflow system: Visual through tank side wall; tank filled via manually operated pumps
- Leak detection: Visual in secondary containment
- Age: < 1 year
- Remaining service life: >20 years

- **WT #2: Chrome reduction, neutralization and precipitation tank** (via addition of magnesium hydroxide neutralization and caustic + sodium hydrosulfate)
  - Horizontal rectangular; 4' W x 6' H x 6' L
  - Extrusion welded polypropylene; appx. 1/2" thickness, steel strap reinforced
  - Seismic bracing: Mounted onto a steel support frame bolted into the concrete containment base and (by 15 July 2012) bracket-bolted to the concrete base.
  - Capacity: 1,080 gallons
  - Influent waste: From WT #1 (corrosive (pH <2) and toxic (Cr^{VI}))
  - Overflow system: Overflow to tank WT #3
  - Leak detection: Visual in secondary containment
  - Age: < 1 year
  - Remaining service life: >20 years

- **WT #3: Holding tank for flocculent addition (polymer flash mix) + flocculator tank**
  - Horizontal rectangular; 2.5' W x 2.5' H x 4' L
  - Extrusion welded polypropylene; appx. 1/2"
  - Seismic bracing: Mounted onto a steel support frame bolted into the concrete containment base
  - Capacity: 180 gallons
  - Influent waste: From WT #2 (toxic (Cr^{VI}))
  - Overflow system: Overflow to tank WT #5
  - Leak detection: Visual in secondary containment
  - Age: < 1 year
  - Remaining service life: >20 years

- **WT #4: Treated waste water (non-hazardous, non-waste) 1,000 gallon holding tank prior to facility reuse.** Tank not part of waste tank assessment

- **WT #5: Stage 1 of two stage clarifier tank**
  - Horizontal rectangular cone bottom; 3.5' W x 3'H x 3.5' L
  - Steel; appx. 1/4" with elastomeric polyurethane coating (interior and exterior)
  - Seismic bracing: Tank frame bolted into the concrete containment base
  - Capacity: 275 gallons
  - Influent waste: From WT #3 (toxic (Cr^{VI}))
  - Overflow system: Overflow to tank WT #6
  - Leak detection: Visual in secondary containment

- Age: Appx. 15 years
- Remaining service life: appx. 10 years

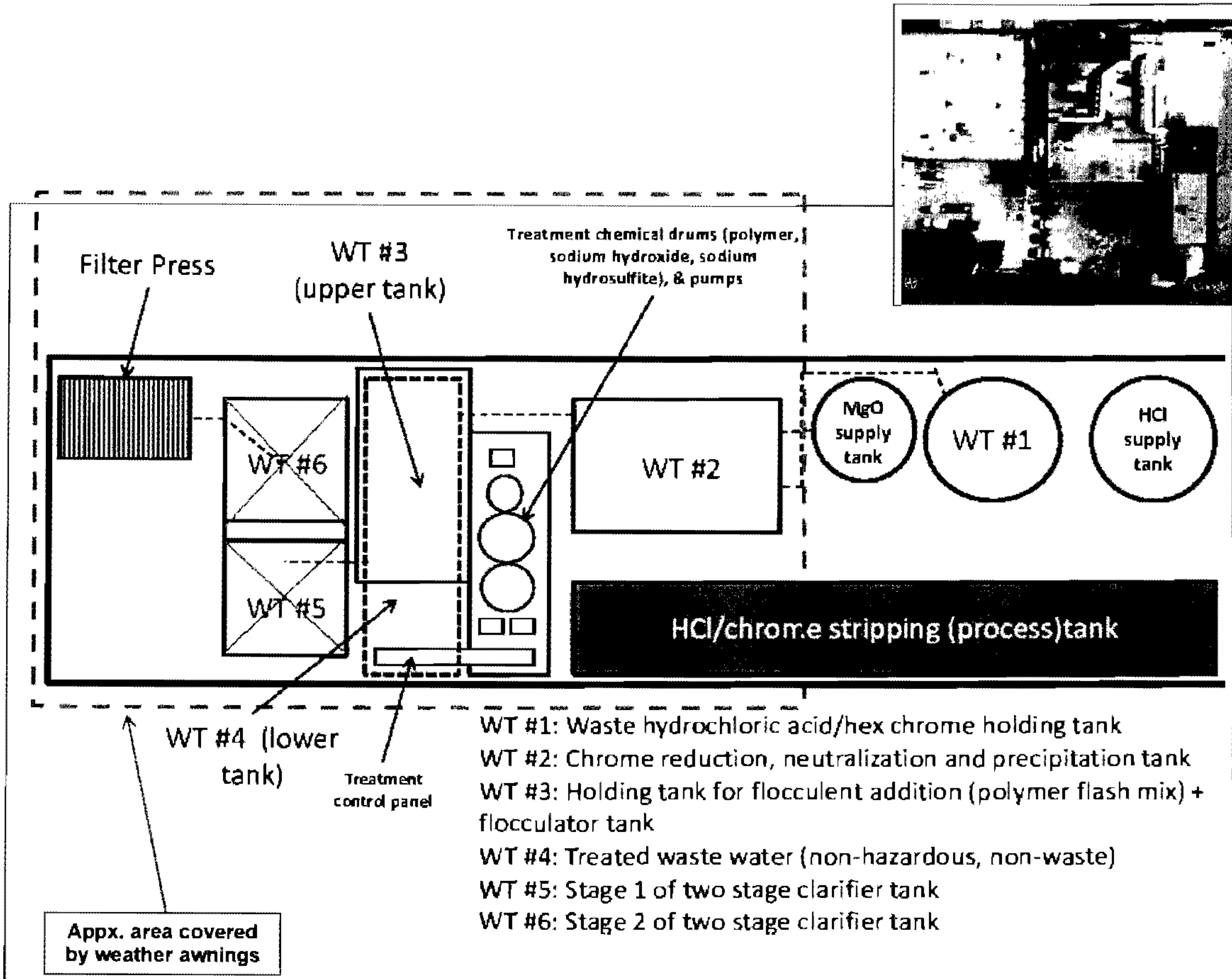
- **WT #6: Stage 2 of two stage clarifier tank**
  - Horizontal rectangular cone bottom; 3.5' W x 3'H x 3.5' L
  - Steel; appx. 1/4" with elastomeric polyurethane coating (interior and exterior)
  - Seismic bracing: Tank frame bolted into the concrete containment base
  - Capacity: 275 gallons
  - Influent waste: From WT #5 (potentially toxic (Cr^{VI}) – depends upon solids concentration)
  - Overflow system: Non-hazardous water overflow to tank WT #4; solids (hazardous waste toxic (Cr^{VI})) to filter press
  - Leak detection: Visual in secondary containment
  - Age: Appx. 15 years
  - Remaining service life: appx. 10 years

- **Filter Press**
  - Horizontal; 3' W x 4'H x 6' L
  - Steel and fiberglass
  - Seismic bracing: Frame bolted into the concrete containment base
  - Capacity: appx. 4 cu. ft.
  - Influent waste: From WT #6 (toxic (Cr^{VI}))
  - Overflow system: Manual reconciliation and into collection hopper
  - Leak detection: Visual in secondary containment
  - Age: 1 year
  - Remaining service life: appx. 20 years

- **Waste treatment system containment area**
  - Horizontal; 9.5' W x 9" H x 46' L
  - Epoxy coated concrete
  - Seismic bracing: reinforced base
  - Capacity: appx. 2,000 gal.
    - % Uncovered and exposed to rainfall = appx. 50%
    - 24 h/ 25 y storm volume (5 inches) = 5 " D x 9.5 ' W x 23' L = 680 gal.
    - Available spill containment capacity = 2,000 – 680 = 1,320 gal.
    - Largest capacity container = WT #2 (1,080 gal); 82% of max. spill containment capacity
  - Age: Coating <2 years, concrete appx. 15 years
  - Remaining service life: appx. 20 years (with as needed recoating)

4.3.2 Design Standards (§66265.192(k)(2)(A – E))

See Assessment Report Section 4.1.1 above for description of materials of construction, thickness and means of measurement, and a description of tank system piping and pumps. A sketch of the tank system is on the following page.


Filter Press
WT #3 (upper tank)
Treatment chemical drums (polymer, sodium hydroxide, sodium hydrosulfite), & pumps
WT #6
WT #5
WT #2
MgO supply tank
WT #1
HCl supply tank
HCl/chrome stripping (process)tank
WT #4 (lower tank)
Treatment control panel
Appx. area covered by weather awnings
WT #1: Waste hydrochloric acid/hex chrome holding tank
WT #2: Chrome reduction, neutralization and precipitation tank
WT #3: Holding tank for flocculent addition (polymer flash mix) + flocculator tank
WT #4: Treated waste water (non-hazardous, non-waste)
WT #5: Stage 1 of two stage clarifier tank
WT #6: Stage 2 of two stage clarifier tank

4.3.3 Documented Age of Tank System (§66265.192(k)(3))

Tanks WT #5 and #6 were constructed in appx. 1999 according to facility personnel (but refurbished and recoated in 2011). Tanks WT #1 through #WT #4 were constructed in 2011. The filter press was constructed in 2001.

4.3.4 Description and Evaluation of Leak Detection (§66265.192(k)(4))

The tank system is visually inspected for condition and leaks each operating day. Considering the tanks have secondary containment, this inspection frequency is adequate to detect a leak from the primary tank before it can escape the secondary containment.

4.3.5 Description and Evaluation of Corrosion Protection (§66265.192(k)(5))

The polyethylene tank materials and the PVC piping are not corroded by the material being processed. The steel tanks are protected by an elastomeric polyurethane coating and are managing water and solids at mid (non corrosive) pH ranges. The existing protection is adequate for the fluids being handled.

4.3.6 Description and Evaluation of Spill Prevention or Overfill Equipment (§66265.192(k)(6))

Overfill and overflow prevention and secondary containment is described in Section 4.3.1.

4.3.7 Description and Evaluation of Secondary Containment for Tank System (§66265.192(k)(7))

Secondary containment has a capacity exceeding 2,100 gallons and the largest contained tank has a calculated capacity of 1,080 gallons. The capacity is sufficient for the volume of the largest container/tank plus the volume of 24 hours of a 25 year storm event (appx. 5 inches) of precipitation).

4.3.8 Hazardous Characteristics of the Wastes Being Handled (§66265.192(k)(8))

The characteristics are corrosivity and toxicity. See Section 4.1.2 above

4.3.9 Tank System Inspection (§66265.192(k)(9))

The tank system was visually inspected for this assessment on 29 February 2012 and 07 June 2012. The results are as follows:

- *No Observed Weld Cracks or Breaks ((k)(9)(A)):* No cracks, breaks or other damage to welds (or any other system component) was observed.
- *Any Observed Scrapes of Protective Coatings ((k)(9)(B)):* The tanks are plastic and do not have protective coatings. . No scrapes or damage to

protective linings or coatings of the containment or steel tanks/steel supports was observed.

- *Any Observed Corrosion ((k)(9)(C)):* The tanks are either plastic and not subject to corrosion or metal and no corrosion was observed on visible metal components of the system (Tanks WT #5 & #6, pumps, structural mounts, etc.).
- *Any Structural Damage or Inadequacy of Construction, Installation Cracks, Punctures or Damaged Fittings (k)(9)(D)):* No structural or fitting damage of any kind or inadequate construction was observed.

4.3.10 Tightness Testing of Tank System (§66265.192(k)(10))

See Assessment Report Section 4.2.3 above. No records exist to document tightness testing of the tank system but no leaks have been reported nor was there evidence of past leaks during the site evaluation.

4.3.11 Estimated Remaining Service Life (§66265.192(k)(11))

The initial service life for the polyethylene and polypropylene tanks or metallic tanks with polyethylene linings is assumed to be 25 years based on the current service. Based on the condition and the materials of the tanks and their installation dates, the estimated remaining service life is 10 years for tanks WT #5 & #6, and over 20 years for all remaining tank system tanks and components.

Supplement A

The items listed in this Supplement to the tank and containment certification must be fulfilled by July 15, 2012, to maintain the validity of the civil engineer's certification of this assessment.

Enhancements to Wastewater Treatment System Required to Maintain Engineer's Certification

- Tank WT-1 – Provide seismic anchoring, as designed by a civil or structural engineer. See 'Typical Tank Anchoring Systems', below.
- Tank WT-2 – Provide seismic anchoring, as designed by a civil or structural engineer. See 'Typical Tank Anchoring Systems', below.
- Secondary Containment – Re-coat exposed concrete and concrete block with an impervious coating that is compatible with the material contained at the east wall, and provide a fillet of epoxy or caulking to effectively serve as a "water stop."
- Install gutters along the edges of the awnings where they extend over the containment area, to limit the amount of rainwater into the containment area. (Stormwater for a 25-year, 24 hour capital storm event is approximately 5 inches for this location, per L.A. Co. DPW records)

Typical Tank Anchoring Systems

Each tank in a system must be evaluated and an appropriate restraint system must be designed by a civil or structural engineer. Restraints must be installed that will resist the effects of seismic forces, wind loading, and, if outdoors, flotation. Typical seismic anchoring systems include those described below:

- Tank WT-1 – Systems for this type of tank employ four 4" x 4" x 8" long angle clips with a welded-in central gusset for attachment of tank restraining cables. Cables may be stainless steel or nylon-coated steel, 5/16" diameter, with two cable clamps and a thimble per end, passing over the tank top, through a ring or otherwise held in place. Clips may be held in place with ½" diameter SS Hilti "Kwik Bolts" or epoxy-set all-thread rods or bolts, two per clip, with approximately 3" embedment. An appropriately designed reinforced concrete slab must support the tank.)
- Tank WT-2 – The existing tank is restrained laterally on a structural steel stand but it is not anchored from lifting off the stand. Anchoring shear and uplift calculations should be performed by a civil or structural engineer. Typical anchoring may include a steel clip fabricated from ¼" to 3/8" steel or SS plate that projects over the tank's polypropylene base and is anchored to the concrete pad with SS anchor bolts, as above. An alternative may be steel or stainless steel straps, or heavy cables, passing over the tank and anchored to the concrete pad with steel angles similar to those discussed for Tank WT-1.